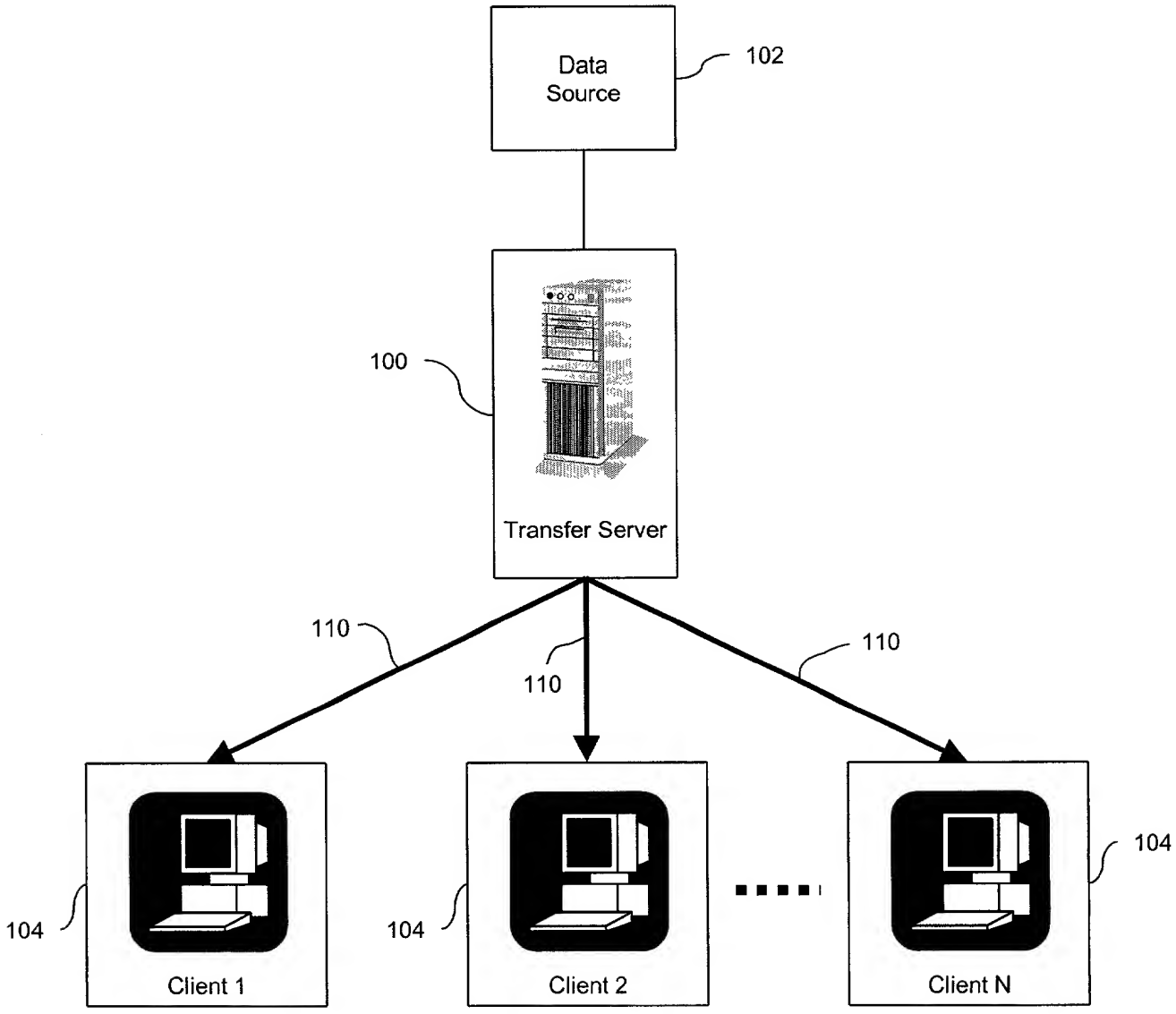

Figure 1
[PRIOR ART]

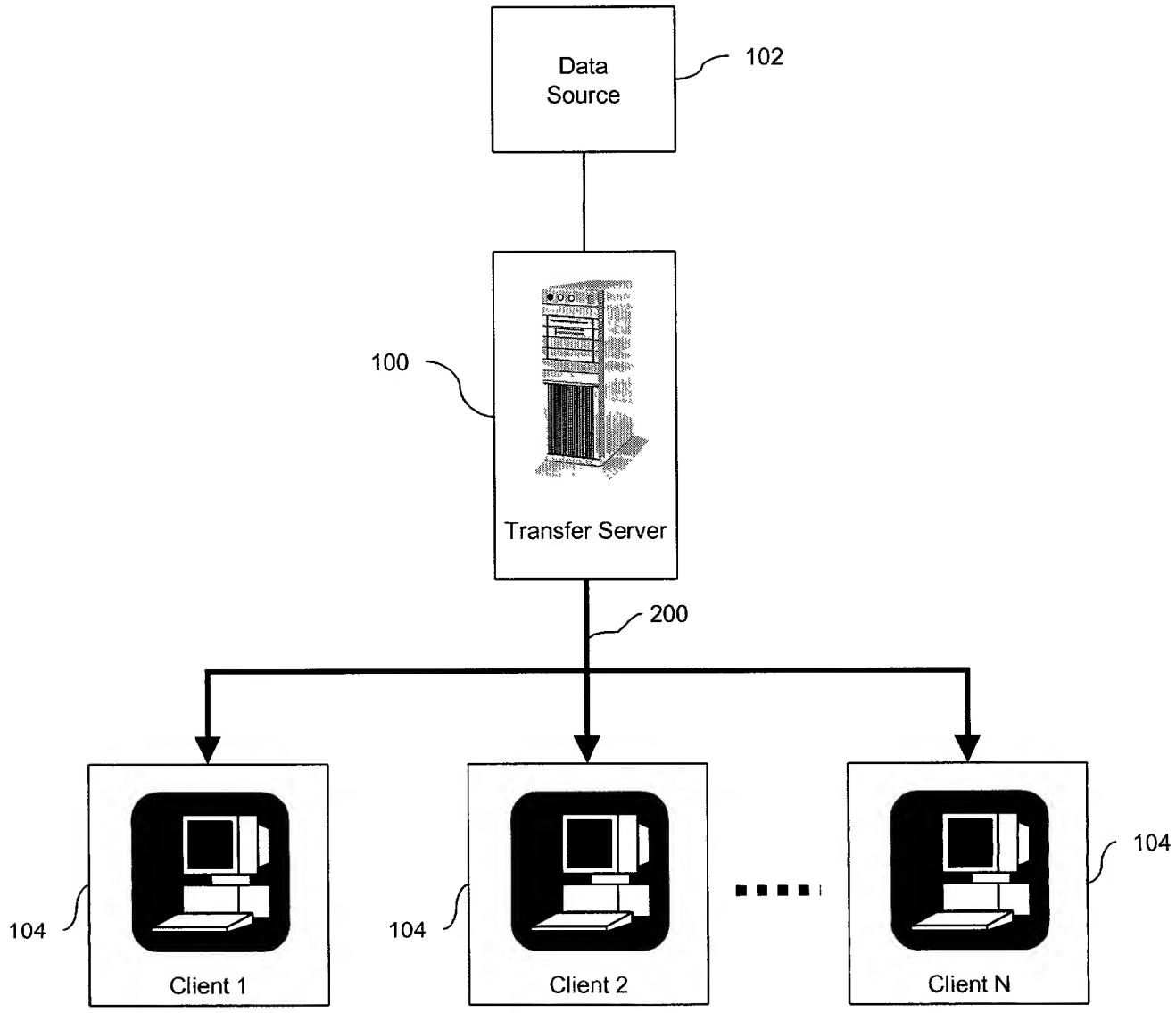

Figure 2
[PRIOR ART]

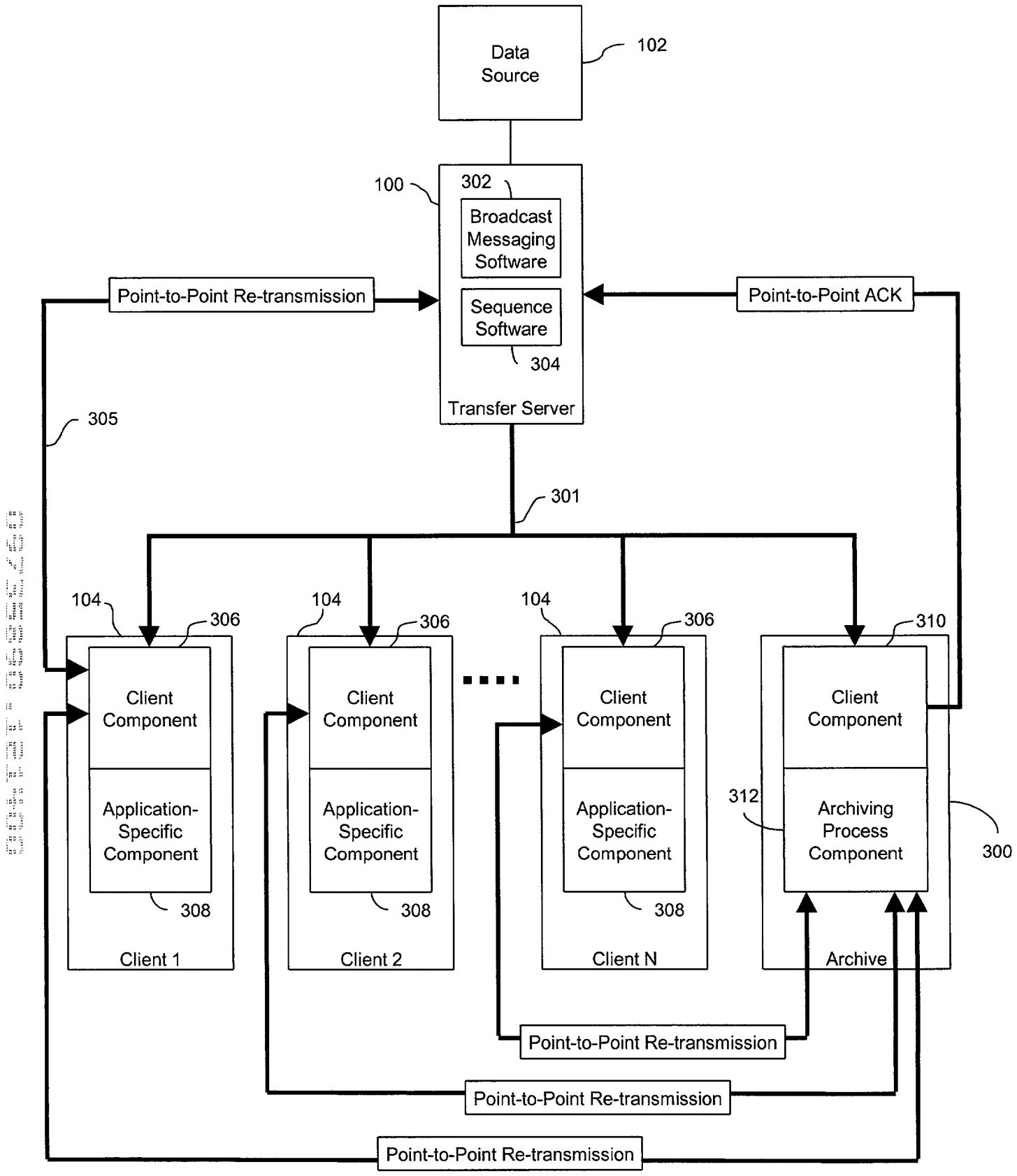
Data Source
102
100
302
Broadcast Messaging Software
Sequence Software
304
Transfer Server
Point-to-Point Re-transmission
Point-to-Point ACK
305
301
104
306
Client Component
Application-Specific Component
308
Client 1
Client 2
Client N
310
Archiving Process Component
312
Archive
300
Point-to-Point Re-transmission
Point-to-Point Re-transmission
Point-to-Point Re-transmission

Figure 3

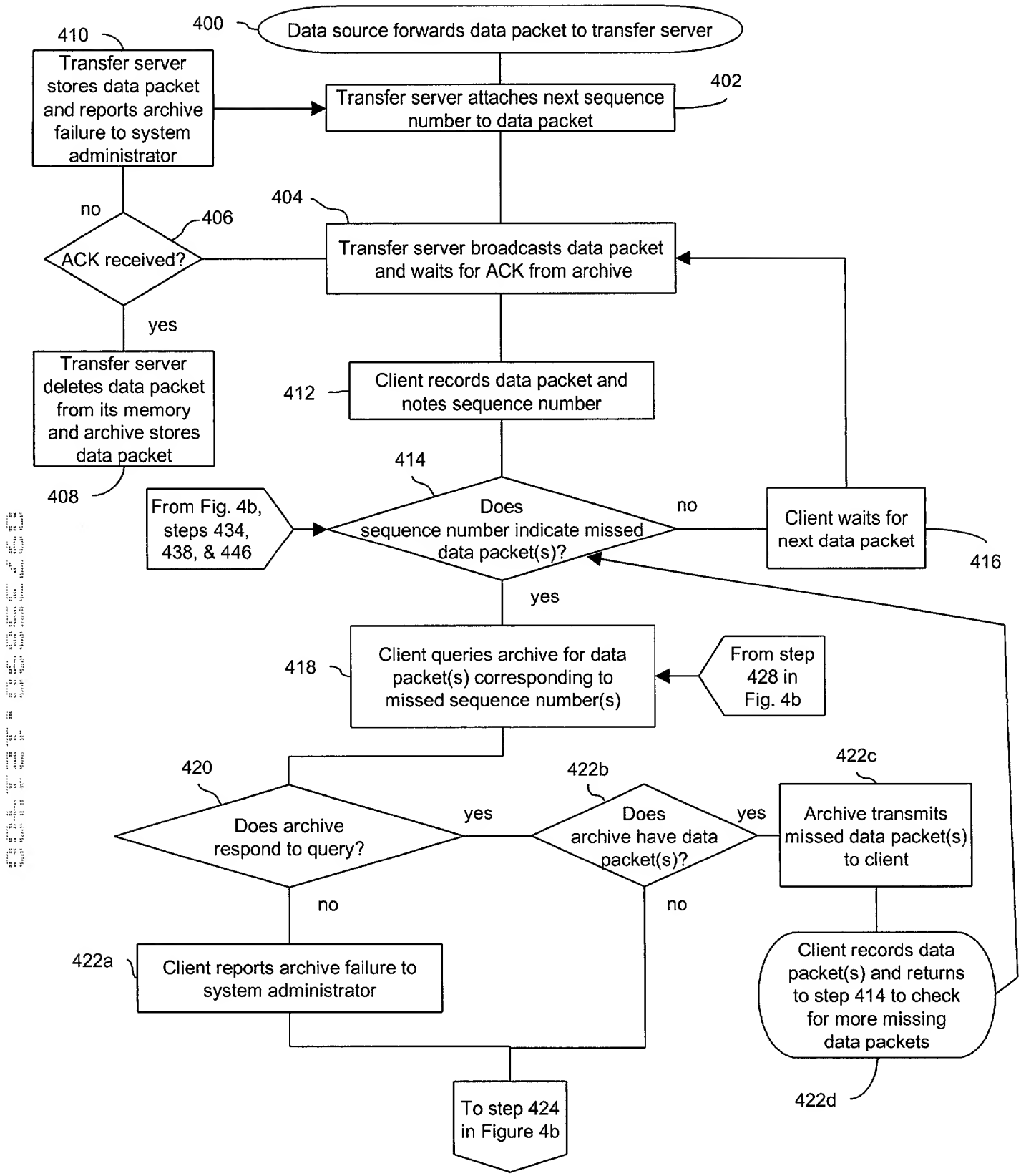
400
Data source forwards data packet to transfer server
410
Transfer server stores data packet and reports archive failure to system administrator
402
Transfer server attaches next sequence number to data packet
404
406
no
ACK received?
Transfer server broadcasts data packet and waits for ACK from archive
yes
Transfer server deletes data packet from its memory and archive stores data packet
408
412
Client records data packet and notes sequence number
414
From Fig. 4b, steps 434, 438, & 446
Does sequence number indicate missed data packet(s)?
no
Client waits for next data packet
416
yes
418
Client queries archive for data packet(s) corresponding to missed sequence number(s)
From step 428 in Fig. 4b
420
Does archive respond to query?
yes
422b
Does archive have data packet(s)?
yes
422c
Archive transmits missed data packet(s) to client
no
no
422a
Client reports archive failure to system administrator
Client records data packet(s) and returns to step 414 to check for more missing data packets
422d
To step 424 in Figure 4b

Figure 4a

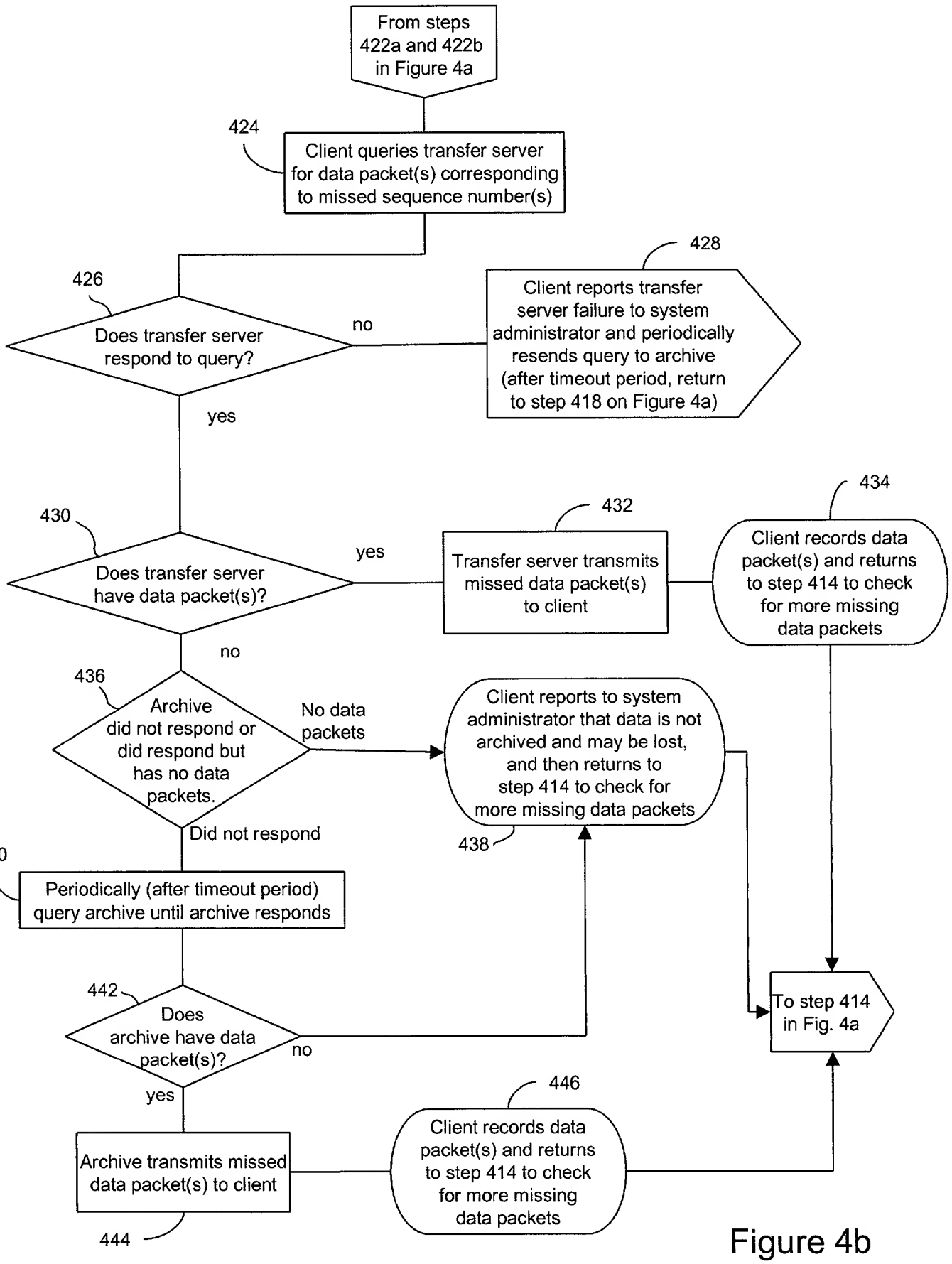
From steps 422a and 422b in Figure 4a
424
Client queries transfer server for data packet(s) corresponding to missed sequence number(s)
426
Does transfer server respond to query?
no
428
Client reports transfer server failure to system administrator and periodically resends query to archive (after timeout period, return to step 418 on Figure 4a)
yes
430
Does transfer server have data packet(s)?
yes
432
Transfer server transmits missed data packet(s) to client
434
Client records data packet(s) and returns to step 414 to check for more missing data packets
no
436
Archive did not respond or did respond but has no data packets.
No data packets
Client reports to system administrator that data is not archived and may be lost, and then returns to step 414 to check for more missing data packets
438
Did not respond
440
Periodically (after timeout period) query archive until archive responds
442
Does archive have data packet(s)?
no
yes
To step 414 in Fig. 4a
446
Client records data packet(s) and returns to step 414 to check for more missing data packets
Archive transmits missed data packet(s) to client
444

Figure 4b